The Effect of the Nursing Program Based on Orem's Self-Care Model on the Quality of Life for Patients with Urostomy

ABSTRACT

Urostomy is a surgical procedure that redirects the flow of urine following a cystectomy. Living with permanent ostomy generally affects quality of life (QoL) and self-efficacy **Aim of the study:** To evaluate the effect of the nursing program based on Orem's self-care model on the quality of life for patients with urostomy. **Research design:** A quasi experimental design. **Setting:** Urology surgery department and urology outpatient clinic in Fayoum University Hospital**. Methods:** A purposive sample of 60 adult patients from previously mentioned setting, allocated randomly into two equal groups (30 patients in each). **Tools**: five tools were utilized, included: Interview Patient's assessment Questionnaire, patients knowledge assessment questionnaire, Patient's Urostomy Self-Care reported Practice Checklist, Stoma Self-Efficacy Scale, Quality of Life Assessment Questionnaire. **Results:** There was a statistical significant difference between both groups as regarding knowledge, self-care practices (P-value <0.001), self-efficacy and quality of life with higher percentage of deficits in self-care practices, self -efficacy and quality of life among control group. **Conclusion:** Application of the nursing program based on Orem's self-care model had a positive effect on the outcomes of patients with urostomy. **Recommendation:** Develop and implement standardized protocols for urostomy care based on Orem's self-care model to enhance self-care practices and quality of care.

Key words: Urostomy, nursing program based on Orem's self-care model, quality of life.

Introduction

Bladder cancer (BC) is one of the most common types of cancer worldwide, with about 550,000 new cases and 200,000 deaths reported annually, accounting for 2.1% of all cancer-related deaths. According to the latest glob can data, BC is particularly prevalent in industrialized nations. For instance, in the United States, BC is the sixth most commonly diagnosed neoplasm **(Tang et al., 2025)**. Additionally, the Bladder cancer is the most common malignant tumor of the urinary system with high morbidity rate and no clear pathogenesis **(Huang, et al., 2025).**

Radical cystectomy with urinary diversion (RCUD) remains the standard of care for the treatment of very high-risk non—muscle-invasive or muscle-invasive bladder cancer. A urostomy is the most common type of urinary diversion, also called a noncontinent UD, requires an external pouch—a disposable plastic bag that sticks to the skin of the abdomen **(Veccia et al., 2024).**

Patients who do not have the resources or skills to effectively manage their condition may subject to complications, which include, but not limited to stomal retraction, obstruction, herniation, prolapse, and peristomal skin irritation. They have a huge impact on quality of life and body image **Babakhanlou et al., (2022).**

Bozkul, et al., (2024) recommends that, Urostomy immensely effect on the patient's everyday life from minor physical activity to social relations. Various factors, such as loss of control over the urine elimination, pouch leaks, bad odor, flatulence, not only can negatively influence the self-esteem and confidence of the of the patients but also compromise the social well-being .

Living with permanent ostomy generally affects quality of life (QoL) and self-efficacy. Since QoL is an essential indicator in life and includes many dimensions such as physiological aspects of a person's performance, it is necessary to pay attention to it; self- efficacy is an individual's belief in the ability that a person can perform one's duties and also means trusting and be- lieving in one's ability to control one's thoughts, feelings, activities, and function effectively in stressful situations **(Baab et al, 2022)**.

Self-care is a basic concept, Orem's nursing theory states that self-care involves taking action to maintain, restore, or improve one's health. Orem discovered three forms of care: fully compensatory, partially compensatory, and supportive-educational. The nurse plays a role in the supportive educational system when the patient is ready to learn but can't without assistance and

guidance. The purpose of the theory is to maintain and promote the patient's ability to self-care as much as possible, to speed up the patient's recovery, and to improve their quality of life **(Li et al., 2024).**

Nurses play a crucial role in helping people with alleviating physical and psychosocial distress through nursing assessment and management as well using of psychosocial intervention and support for the urinary diversion patient and his family, help them to rehabilitation, and assist improve patient's quality of life. So Implementing of nursing program based on the Orem's self-care can improve patient's self-care ability and improving quality of care and patient's outcomes **(Melo et al., 2024).**

Significance of Study:

Bladder cancer is the 10th most common cancer worldwide and the fourth most common cancer in men. According to the American Cancer Society, an estimated 83,190 new bladder cancer cases are expected in the United States in 2024, resulting in 16,840 deaths worldwide, 573,278 people were diagnosed with bladder cancer in 2020**(Siegel et al. 2024).** Patients with urostomy often face challenges related to managing their stoma, including skin irritation, leakage, and odor control. These issues can significantly impact their quality of life, self-esteem, and overall well-being **(Marinova& Marinova, 2024)**.

According to **Smith et al. (2022),** self-care interventions can significantly improve quality of life and reduce complications in patients with urostomy. By empowering patients to manage their condition and adapt to life with a urostomy, healthcare providers can improve patient outcomes and enhance overall well-being. For instance, **Shi et al. (2020)** found that implementing an educational program based on Orem's self-care model supports patients with urostomy in achieving optimal self-care, quality of life, and reducing complications.

In light of this evidence, the current study aims to evaluate the effect of the nursing program based on Orem's self-care model on the quality of life for patients with urostomy

Aim of the Study

The present study aimed to evaluate the effect of the nursing program based on Orem's self-care model on the quality of life for patients with urostomy through the following objectives:

1. Assess levels of knowledge and self-care practice for patients with urostomy.
2. Develop the nursing program based on Orem's self-care model and patient basic assessment needs.
3. Implement the nursing program based on Orem's self-care model.
4. Evaluate the effect of implementing the nursing program based on Orem's self-care model on quality of life for patients with urostomy.

Research Hypothesis:

H0: Patients who will receive the nursing program based on Orem's self-care model will not exhibit better physical, psychological, social and spiritual well-being more than those who will not receive the program.

H1: Patients who will receive the nursing program based on Orem's self-care model will be exhibit higher level of knowledge and skills regarding care of urostomy than those who will not receive the program as measure by **tool (II, III &IV).**

H2: Patients who will receive the nursing program based on Orem's self-care model will be exhibit better physical, psychological, social and spiritual well-being more than those who will not receive the program as measure by **tool (V).**

Theoretical Framework

The present study employed Orem's Self-care Deficit Nursing Theory (SCDNT) as a theoretical framework of reference in implementing the self-care management program. The theory includes the theoretical constructs of Self-Care, Self-Care Deficits and Nursing Systems **(Marques, et al., 2022).** According to the theory, nursing is required in situations of self-care deficits, which occurs when an individual is unable to fulfill self-care activities. It can encompass limitations in knowledge, the ability to perform actions, or making decisions, and nurses play an essential role in fulfilling the self-care need activities using the theory of the nursing system **(Aguirre, 2022)**.

Orem comprises the nursing process as a method of determining self-care deficiencies that allows the definition of the roles of nurses and the self-care agent, so as to satisfy the self-care requisites. which is configured in the action of the nurse to intervene on the needs of self-care, as well as to assess continuously the effects of this action **(Gonzalo, 2021).**

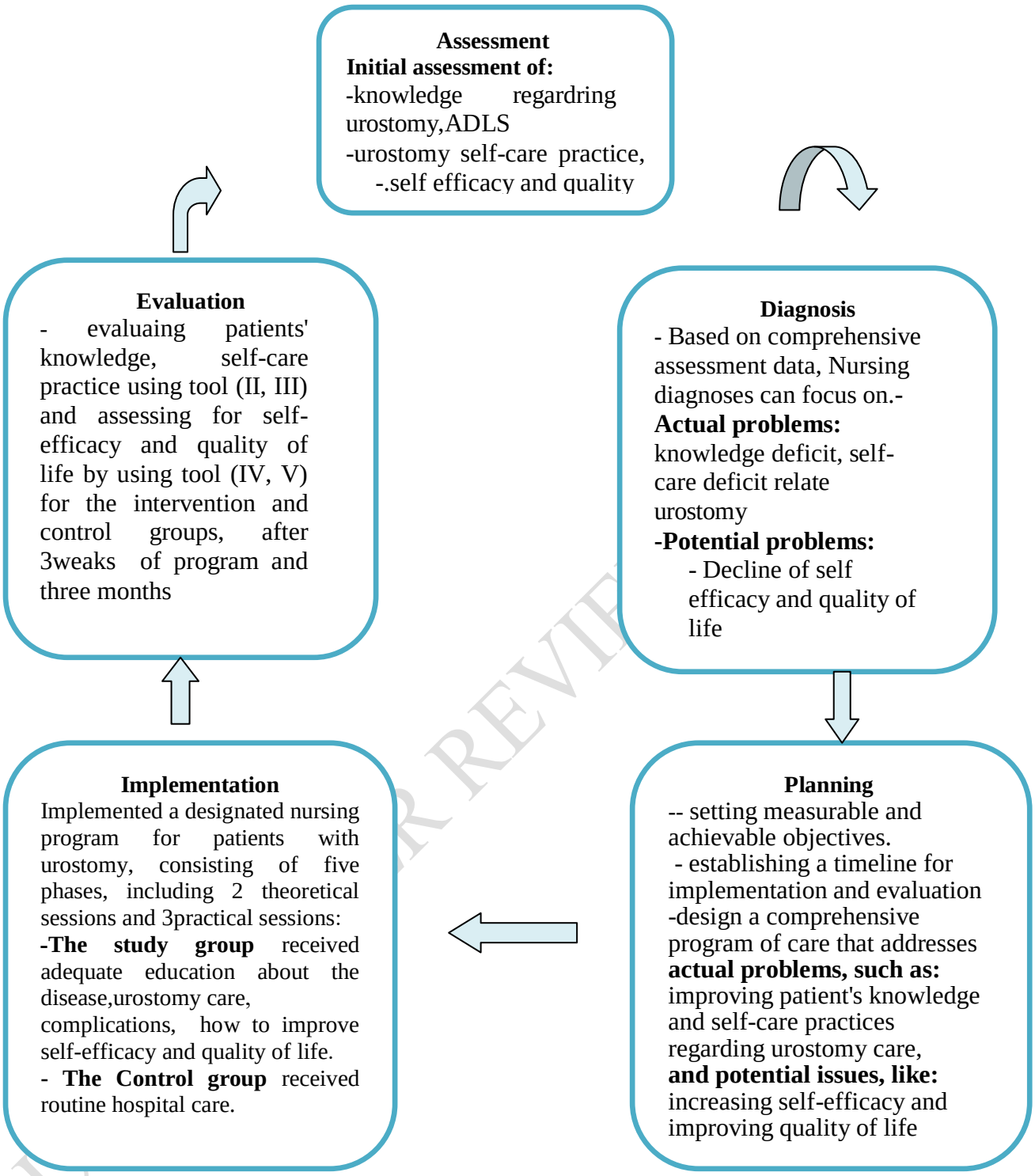

Figure (1): Nursing process according to Orem theoretical model for patients with urostomy designated by the researcher.

Subject and Methods

Research Design:

A Quasi-experimental design was utilized to conduct the study.

Setting:

This study was conducted in Urology Outpatient Clinic and Urology Surgery department in Fayoum University Hospital.

Subjects:

A purposive sample of 60 adult patients from both genders. They were recruited from the previously mentioned setting and divided randomly into two equal groups study and control (30 patients for each group).

Study group: patients who received the nursing program based on Orem self-care model in addition to routine nursing care.

Control group: patients who received hospital routine nursing care only.

Subjects criteria:

Inclusion criteria:

1- Adult Patients from both genders agree to participate in the study.
2- Patients with urostomy after radical cystectomy.
3- Patient fully conscious and able to communicate verbally.

Exclusion criteria:

1. Patients with physical or psychological disabilities.

Tools of Data Collection:

Five tools were used to collect the data according to the following:

Tool I: Interview Patient's assessment Questionnaire: It developed by the researcher in English and Arabic language based on relevant, recent

literatures **(Smeltzer, et al., 2018)** to collect baseline data pertinent to the current study. It will be consisted of two parts as follow:

Part (1): patient Socio-demographic data: This part concerned with patients' age, gender, marital status, educational level, occupation, income and residence.

Part (2): Patients' related medical past and current history: it includes information about know what disease you are suffering from, data related to previous hospitalization, sign and symptoms, chronic diseases, family history.

Tool (II): Patients' Knowledge Assessment Questionnaire:

This tool developed by the researcher after reviewing related literatures **(Stromberg, 2021 ; Berti-Hearn & Elliott, 2019**) to assess patients knowledge regarding urostomy patients after radical cystectomy and including the following parts:

Part I: this part contains questions about anatomy of urinary system, bladder cancer, definition of radical cystectomy, and general knowledge about definition of urostomy and type of urostomy (7 items).

Part II: **Patients' knowledge about urostomy:** It composed of 12multiple choice questions to assess patient's knowledge about stoma and pouch system, who to care for stoma and pouch system, Complications and signs for immediate doctors visiting.

Part III: **knowledge about activity of daily living:** : this part consists of 9 multiple choice questions concerned with post discharge self-care like back to work, activities, nutrition, hydration, travels, appropriate clothing psychological and social disturbance and sexual activity.

Scoring system: Patient's knowledge assessment questionnaire consisted of 28 questions, the correct answers were predetermined according to literature review, a correct answer was scored 1 point and

incorrect answer was scored 0 point, and satisfactory level was detected based on statistical analysis as following:

- Satisfactory knowledge level ≥70 %
- Unsatisfactory knowledge level < 70 %

Tool (III): Patient's Urostomy Self-Care reported Practice Checklist: This tool developed by the researchers based on the related literature (***Berman, et al., 2016& Perry, et al., 2021).*** To assess self-care practices. Consists of 3 main parts as the following:

Part I: to assess patient's practice regarding change pouch (12 items).

Part II: to assess patient's practice regarding Skin care around urostomy bag (7items).

Part III: to assess patient's practice regarding empty pouch (4 items).

Scoring system: the total items of checklist were (23), each step has 2 levels of answers (not done, done completely). These were respectively scored (0, 1). The score of the items were summed up and the total divided by the number of items, giving a mean score. These scores were converted in a percent score, and means and standard deviations were computed. Complete practice was detected based on statistical analysis as following:

- Complete practice level ≥70 %
- Incomplete practice level <70 %

Tool (IV): Stoma Self-Efficacy Scale:

This scale provides a valuable measure of patients' confidence in managing their stoma, allowing healthcare providers to identify areas where patients may need additional support or education. It was adapted from **(Karaçay, et al., 2020).** The Stoma SE Scale is consisted of two components, the

first component, Stoma Care Self- Efficacy. Assesses expected self-efficacy regarding capability to care for one's stoma. The second; Social Self-Efficacy, assesses self- efficacy regarding social functioning with the stoma.

Scoring system for Stoma Self-Efficacy Scale:

The Stoma Self-Efficacy Scale is a tool used to assess patients' confidence in managing their stoma. The scale consists of items that are scored based on patients' responses, with the following categories: Not being confident at all (1 point), slightly confident (2 points), Fairly confident (3 points), Highly confident (4 points), and Extremely confident (5 points). The total score ranges from a minimum to a maximum of 110 points. Patients' self-efficacy is then categorized based on their total score, with scores less than 70% indicating low self-efficacy and scores above 70% indicating high self-efficacy.

Tool (V): Quality of Life Assessment Questionnaire:

Patients with urostomy will be assessed by City of Hope Quality of Life-Ostomy Questionnaire (CoH-QoL-OQ) for their quality of life. This tool will be adapted from **(Grant et al.,2004)** and translated into Arabic by researchers. It contains questions related to 4 domains of life i.e Physical (1-11 items), Psychological (12-24 items), Social (25- 36 items) and Spiritual (37-43 items).

Scoring system for Quality of Life Assessment Questionnaire:

Patient Quality of Life-Ostomy assessment Questionnaire consisted of 43 questions**,** Subjects were asked to respond to each item with a score of 1-10. A high score indicate a better quality of life and low score indicate the worst. The level of Quality of life was categorized as per the scores into Very severe (0-25%), Severe (26-50%), Moderate (51-75%) and Mild (>75%).

Ethical consideration:

An ethical approval to conduct the proposed study was obtained from the Scientific Research, Ethical Committee of the faculty of Nursing, Helwan University. An official permission was obtained from the administrative authority of the selected setting for the current study.

The researcher obtained consent from the studied patients, explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of data assured by the researcher by using codes to identify participants instead of names or any other personal identifiers.

Pilot study:

A Pilot study was carried out with 10% (not less than 10 patients) of the sample under study. Patients who shared in pilot study excluded from the study sample.

Field Work:

Sampling was started and completed within nine months from May 2024 to the end of January2025.and carried out through four phases: assessment, designing, implementing and evaluation.

Assessment Phase:

- During this phase, the researcher visited the selected setting regularly, four days per week, selected patient according to inclusion criteria, and then assigned them randomly to either a study or control group. Initial assessment was done by the researcher for all study subjects in study and control groups regarding to participants' sociodemographic and health history. Data collection was held through structured interviews and medical record chart. data collection was filled by the researcher, by using tools (I), tool (II), tool (III), tool (IV) and tool (V) for study and control groups as follows:

Tool I: Was utilized to assess patients' socio-demographic characteristics and medical history data that filled for the study and control groups, it took around 10 minutes.

Tool II: To assess patient about knowledge regarding patients with urostomy; part I& part II in this questionnaire were obtained from patients postoperative before discharge while, part III of the same questionnaire were completed during first visit outpatient clinical post discharge because the patient don't handling with ostomy according policy of hospital and to assess quality of life with urostomy. It took around 15-20 minutes.

Tool III: To assess Self-Care Practice for patient with urostomy, it took around 15-20 minutes.

Tool IV: To assess Stoma Self Efficacy Scale specific to patient with urostomy, it took around 15-20 minutes.

Tool V: To assess quality of life among patient with urostomy. it took around 20-25 minutes.

II- Second phase (diagnosis phase)

According to Orem's theory diagnosis provides the basis for selection of nursing interventions to achieve outcomes for which the nurse is accountable, actual problems includes: such as knowledge deficits related to urostomy care, self-care deficits, impaired skin integrity, anxiety, and disturbed body image, as well as potential issues like risk for infection, risk for impaired self-efficacy, risk for fluid and electrolyte imbalance, and risk for decreased quality of life.

III- Planning and design phase:

The researcher plan intervention, design the educational section's content according to the patient's needs. Detected needs, requirements and deficiencies were translated into the aim and objectives of the

educational program sections in the form of educational booklet in order to improve patient's knowledge, self-care practices and quality of life.

- The educational training program was written in simple Arabic language easy to be understood from patients.

III- Implementation phase:

- Self-care program was developed by the researcher and implemented immediately after the pre-test**.** No intervention was performed for the control group during the study.
- Implementing the nursing program for the study group (30) patient, in term of post-operative care, educational sessions, discharge instructions and follow up. the program was divided into 5 sessions (2 theoretical, and 3 practical sessions) The researcher started teaching lectures from 9 am to 1 pm 4 days/ week
- At the beginning of each session, discussions about the previously explained topics to patients were done by the researcher to determine their knowledge level as well as misremembered and vague points. Then, a summary of the last session was given to help the patients to restore their memories.
- - Each participant obtains a copy of the nursing guidelines booklet. The researcher used pictures for illustration, and video to educate the patient.

IV- Evaluation phase:

Evaluation phase aimed to reassess patients after implementation of nursing program to identify progress in term of differences in patients' level of response from baseline. The study patients were evaluated 3 times by study tools as following :

- ❖ The first evaluation (pretest) was done postoperatively before discharge using tool I& part I from tool II. First visit

outpatient clinical post discharge the researcher complete tool II, III, IV&V.

- ❖ The second evaluation (posttest) was done after 2weaks from implementation of the intervention using tool II, III, IV&V .
- ❖ Follow up was done three months after implementation of the intervention using tool II,III, IV& V.

Result

Table (1): Frequency and percentage distribution of sociodemographic characteristics for both Study and control groups (N: 60)**.**

Socio-demographic data	Control group (n=40)		Study group (n=40)		*x2*	P-value
	N	%	N	%		
Age group						
40-49 Yrs	**1**	**3.3**	**2**	**6.7**	**0.410**	**0.815**
50-59 Yrs	**7**	**23.3**	**6**	**20**		
60 Yrs and more	**22**	**73.3**	**22**	**73.3**		
Mean±SD	63.166±7.4		63.17±7.35		*ttest=0.00*	1.000
Gender						
Male	**24**	**80**	**22**	**73.3**	x^2 = **0.373**	**0.542**
Female	**6**	**20**	**8**	**26.7**		
Social Status						
Single	**1**	**3.3**	**1**	**3.3**	**Fisher exact =0.259**	**0.754**
Married	**23**	**76.7**	**15**	**83.3**		
Widowed	**1**	**3.3**	**0**	**0**		
Divorced	**5**	**16.7**	**4**	**13.3**		
Level of Education						
Can't read and write	**19**	**63.3**	**19**	**63.3**	***Fisher exact* =0.096**	**0.757**
Primary education	**8**	**26.7**	**7**	**23.3**		
Secondary education	**2**	**6.7**	**2**	**6.7**		
University education	**1**	**3.3**	**2**	**6.7**		
Occupation						
Doesn't work	**17**	**56.7**	**16**	**53.3**	**x2 = 1.114**	**0.774**
Employee	**1**	**3.3**	**2**	**6.7**		
Retried	**9**	**30**	**7**	**23.3**		
House wife	**3**	**10**	**5**	**16.7**		

Place of residence						
Urban	**8**	**26.7**	**8**	**26.7**	x^2 = **0.000**	**1.000**
Rural	**22**	**73.3**	**22**	**73.3**		
Income						
Sufficient	**6**	**20**	**6**	**20**	x^2 = **0.000**	**1.000**
Insufficient	**24**	**80**	**24**	**80**		

Table (1) illustrates that there was no statistical significant difference between study and control groups with p-value >0.05, as regarding socio-demographic characteristics like; age, gender, social status, education level, occupation, place of residence, and monthly income which indicated proper matching between groups in these variables.

Table (2): Frequency and percentage distribution the patient's total knowledge for the two groups during pre, post, and follow up phase (N:60).

Variable	**Total Patient's Knowledge**												x^2	**P-Value**
	Pre				**Post**				**Follow Up**					
	Control group (n=30)		**Study group (n=30)**		**Control group (n=30)**		**Study group (n=30)**		**Control group (n=30)**		**Study group (n=30)**			
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**		
Unsatisfactory	**30**	**100**	**29**	**96.7**	**30**	**100**	**2**	**6.7**	**30**	**100**	**7**	**23.3**	73.12	**0.000***
Satisfactory	**0**	**0**	**1**	**3.3**	**0**	**0**	**28**	**93.3**	**0**	**0**	**23**	**76.7**		
Test &P-Value	*Fisher Exact test=* 1.017 (0.317)				x^2= 37.26 **(0.000*)**				x^2= 52.50 **(0.000*)**					

Table (2) showed that; there was no statistically significant difference in knowledge between the control and study groups at the pre-test, while there was a statistically significant difference in knowledge between the control and study groups at the post and follow up test.

Figure (1): total urostomy self-care practices for the two groups during pre, post, and follow up phase (No. 60).

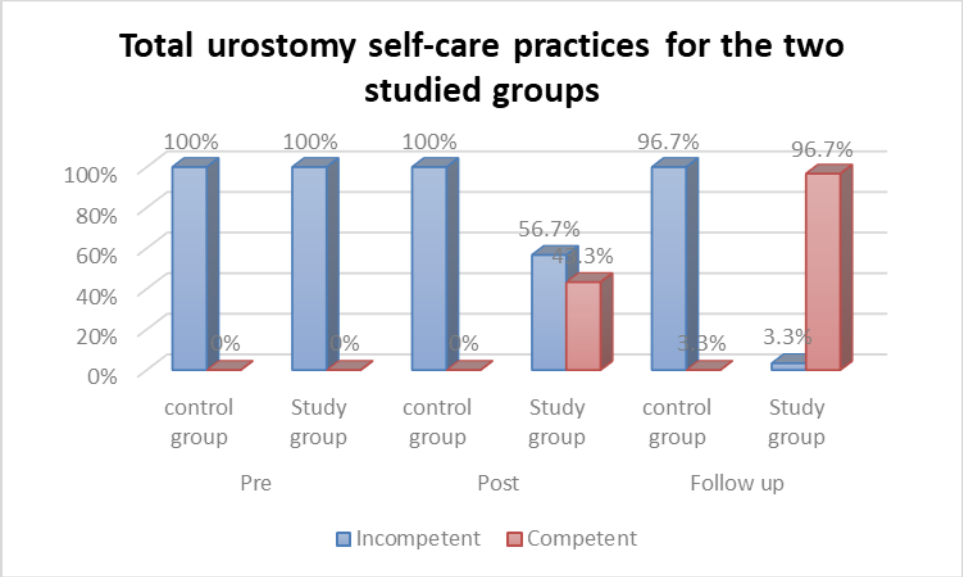

Fig. (1) illustrated that there was a significant improvement in the study group within post and follow up test, the study group showed marked improvement post-intervention and maintained this competence over time.

Figure (2): patient's total Self-efficacy for the two groups during pre, post, and follow up phase.

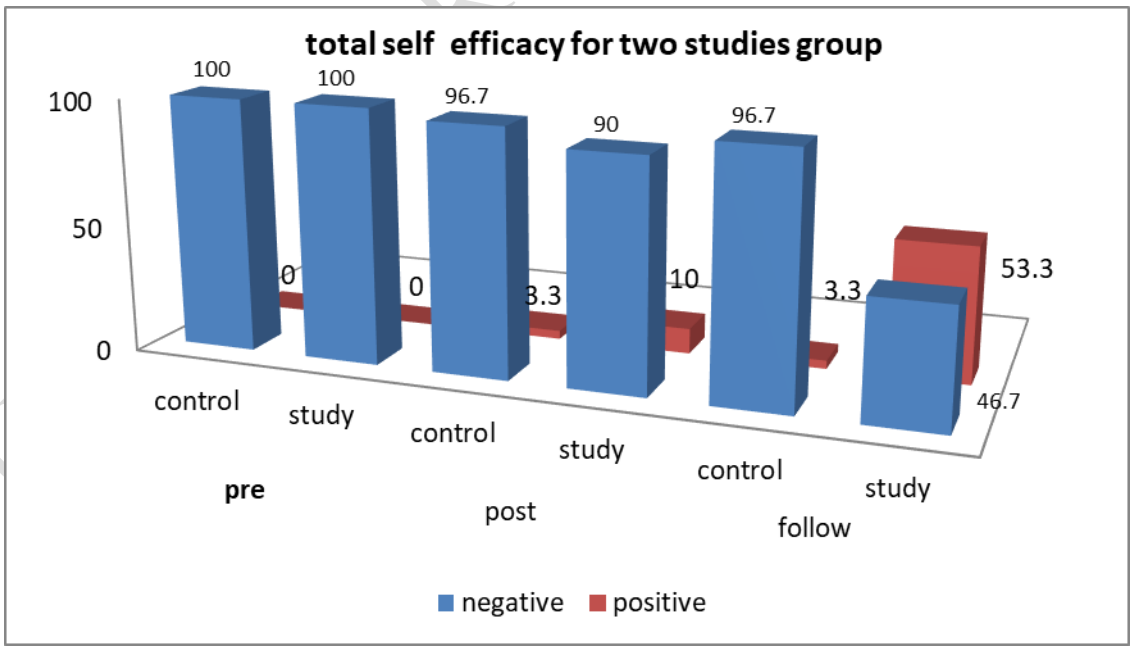

Fig. (2) illustrates that; the study group showed a significant improvement with (53.3%) of the patients demonstrating positive self-efficacy within follow up test.

Table (3): Frequency and percentage distribution of patient's quality of life during pre-program. (n=60).

Variable	Studied patients (n = 60)		T-Test	P-Value
	Control group (n=30)	Study group (n=30)		
Total patients' physical quality of life.	41.96±10.19	44.86±12.80	0.970	0.336
Total patients' psychological quality of life.	30.80±15.15	34.76±19.13	*0.890*	0.377
Total patients' social quality of life.	36.90±8.84	40.53±12.29	1.314	0.194
Total patients spritual quality of life.	16.36±8.73	19.80±10.40	1.385	0.171
Total patients' quality of life.	126.03±37.55	139.9±50.90	1.206	0.233

**: Significant at P ≤ 0.05*

Table (3): illustrated that there was no significant difference between the control and study groups across all aspects of quality of life: physical, psychological, social, spiritual, and overall quality of life within pretest. This implies that both groups have similar levels of perceived quality of life in these areas.

Table (4): Frequency and percentage distribution of patient's quality of life during post-program. (n=60).

Variable	Studied patients (n = 60)		T-Test	P-Value
	Control group (n=30)	Study group (n=30)		
Total patients' physical quality of life.	41.86±10.24	69.33±12.73	9.207	**0.000***
Total patients' psychological quality of life.	30.30±15.09	61.06±14.25	8.119	**0.000***
Total patients' social quality of life.	36.83±8.64	58.60±11.88	8.111	**0.000***
Total patients spritual quality of life.	16.20±8.69	32.43±11.02	6.330	**0.000***
Total patients' quality of life.	125.20±37.34	221.43±45.34	8.973	**0.000***

**: Significant at P ≤ 0.05*

Table (4): indicates that; there was a significant difference between the control and study groups across all aspects of quality of life: physical, psychological, social, spiritual, and overall quality of life within pre-program.

Table (5): Frequency and percentage distribution of patient's quality of life during follow up phase. (n=60).

Variable	Studied patients (n = 60)		T-Test	P-Value
	Control group (n=30)	Study group (n=30)		
Total patients' physical quality of life.	41.86±10.24	88.60±13.68	14.97	**0.000***
Total patients' psychological quality of life.	30.40±14.71	83.93±18.84	12.26	**0.000***
Total patients' social quality of life.	38.03±8.80	75.56±13.52	12.73	**0.000***
Total patients spiritual quality of life.	16.13±8.47	43.83±12.96	9.79	**0.000***
Total patients' quality of life.	126.4±35.68	291.9±54.5	13.91	**0.000***

*: *Significant at P ≤ 0.05*

Table (5): indicates that; there was a significant difference between the control and study groups across all aspects of quality of life: physical, psychological, social, spiritual, and overall quality of life within pretest.

Figure (3): the patient's total quality of life for the two groups during pre, post, and follow up phase:-

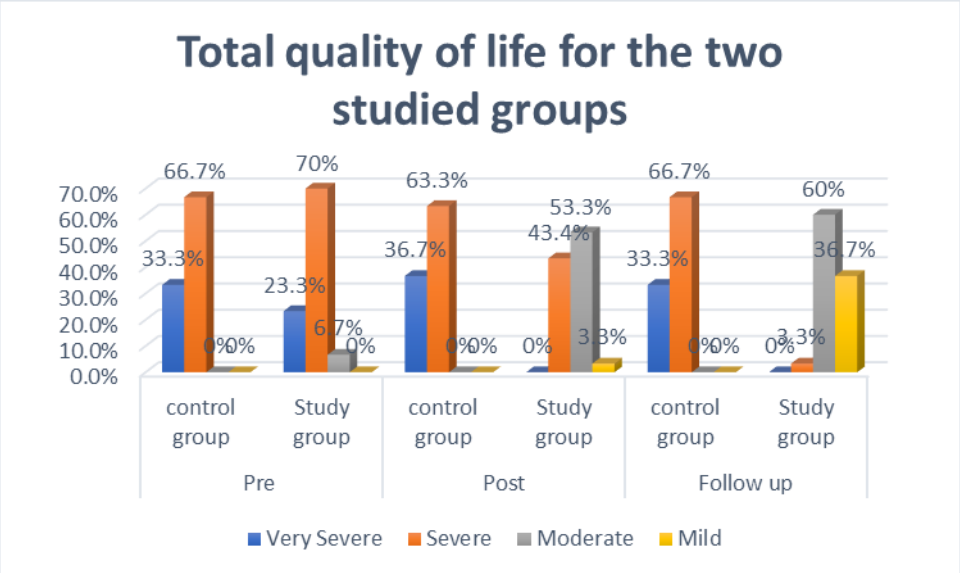

Fig. (3) shows that; there was a statistically significant difference between the two groups within post and follow up test.

Table (6): Correlation between patients' total knowledge and total practice, total self-efficacy, and total quality of life.

Items	Total Patients' Knowledge					
	Pre		Post		Follow Up	
	r	p	r	p	r	p
Total Practice	0.622	**0.000***	0.918	**0.000***	0.903	**0.000***
Total Self Efficacy	0.551	**0.000***	0.874	**0.000***	0.905	**0.000***
Total QOL	0.425	**0.001***	0.809	**0.000***	0.878	**0.000***

*: *Significant at P ≤ 0.05*

Table (6): illustrates that; there was a significant positive correlation between patients' knowledge, Practice, self-efficacy and quality of life within the three tests..

Discussion

In the present study, findings regarding to the patient's characteristics revealed that, the sociod-demographic and medical characteristics of subjects in both study and control groups, were not significantly dissimilar; this means that the participants were selected from identical population of patients undergoing urostomy with good random allocation obtained. The mean age of the studied patients in both study and control groups was (63.166±7.4, 63.17±7.35) respectively. This finding agrees with **Hao et al., (2022)** who conducted " Effect of the whole seamless connection of nursing from WeChat interactive platform on stigma and quality of life in patients with urinary system cancer."**,** reported that mean age of the studied patients in both study and control groups was (64.8 ± 12.58, 63.25 ± 17.16) respectively.

As regarding gender, marital status it was found that, majority of the studied patients in both study and control groups were male, the majority of them were married, this could be related to, males were more prone to be affected than females, may be due to the risk factors that

cause bladder cancer like cigarette smoking which is known to increase the risk of developing transitional cell carcinoma in smokers by much as four times that in nonsmokers. Also, industrial exposure to known carcinogens constitutes a significant risk factor. Men usually occupy these types of work.

This result was in agreement with **(Serag, Ahmed & El Sayed 2022).** Who conducted a study entitled " Psycho-Educational Nursing Program for Enhancement the Quality of Life among Bladder Cancer Patients with Urinary Diversion " and found that majority of patients were male and majority of patients were married. These findings also agree with **(Rammant et al., 2020)** who conducted a study entitled "Health-related quality of life overview after different curative treatment options in muscle invasive bladder cancer" and found that majority of patients were male &married.

Concerning education level, occupation, residence, and income of the studied subjects, half of the studied patients in both the study and control groups could not read and write, more than half of them did not work, lived in rural areas, and had insufficient income. From the researcher's point of view, in light of the fact that the majority of the studied subjects came from rural areas where education is not considered a top priority, and about half of the patients' ages were more than fifty years, which is a retirement age, and their health condition forced them to stop working. Therefore, patients' income was insufficient.

This result is in agreement with the study done by **Reda et al. (2022),** entitled "Quality of Life after Radical Cystectomy for Patients with Bladder Cancer", which found that more than half of studied patient were illiterate, and less than three-quarters of them were not working and majority of them did not have enough monthly income. This result is also

in line with **Serag et al., (2022).** Who conducted a study entitled " Psycho-Educational Nursing Program for Enhancement the Quality of Life among Bladder Cancer Patients with Urinary Diversion " and found that more than one third of the studied patients were illiterate, half of them were unemployed and more than half of them came from rural areas.

Pertaining to patients' knowledge regarding urostomy care, possible complications and activity of daily living post oprative, the findings of the present study illustrated that, there was no statistical significant difference between study and control groups as regarding knowledge scores before the nursing program implementation, as the studied patients allocated randomly from the same population.

This findings are in line with **Ding et al., (2024)** who conducted " Effects of peer-led education on knowledge, attitudes, practices of stoma care, and quality of life in bladder cancer patients after permanent ostomy " stated that the results demonstrate that two groups in light of studied main domains and they have same level of education and knowledge about basic knowledge of disease and urostomy care before intervention ($p > 0.05$).

The result of the present study demonstrated that, there is an improvement in patients' knowledge in the study group after the implementation of nursing program and follow up, from the researcher point of view, this result may be due to training program affect patients' knowledge positively that appeared in the highest scores in the post intervention phase. The studied patients were prone to the nusing program covered all the knowledge, and skills needed by the patient based on the assessment done during the pilot study and included all

items related to the knowledge about urostomy surgery and how to adapt to the stoma.

This finding was supported with **Shi et al., (2020)** who conducted a study about "Effect of Orem's self-care model on quality of life and complications in the patients with cutaneous ureterostomy after radical cystectomy" and found that there was a highly statistical significant improvement in all items of the knowledge about urinary bladder post implementation educational nursing program. In the same line with **Gamal, Mossad & Mohamed., (2023).** Who conducted a study about "Effect of Designed Nursing Protocol on Self-Reported Outcomes among Patients with Bladder Cancer Undergoing Radical Cystectomy" and found that there was a significant difference between pre nursing protocol with immediate post and post three months periods.

Concerning to patients' practice regarding urostomy care; findings of the present study revealed that there was no significant difference in the mean of urostomy self-care practice scores of the study and control groups before the educational intervention, instead, there was a significant difference between both groups after implementing educational intervention and follow up. This confirms the effectiveness of demonstration and re-demonstration of self-care practices of urostomy care.

This finding agrees with **Mohamed& Al-Mansour, (2023).** who stated in a study about " knowledge and practice improvement in patients with urinary diversion: the role of educational intervention", that the findings showed that there were unsatisfactory self-care practices about stoma care for both study and control group pre implementation of program, while improved among study groups post and 3months after implementation.

As well, these findings agree with **Tan et al., (2022).** Who conducted a study about " Use of an Application to Increase Self-Care Ability, Improve Quality of Life, and Decrease Stoma Complications in Patients With Ileocystoplasty or Ureterostomy Due to Bladder Cancer ". Found that, Self-care ability scores in the intervention group were significantly improved then control group.

Following urostomy, the normal anatomy and function of the urinary system are changed, and urine is diverted to the exterior through an abdominal opening. Urinary diversion patients must adapt to a certain medical care situation, including stoma care or CIC. Clients will require having self-efficacy in their capacity to combine the new physical changes after surgery and skillfully maintain self-care of their diversion. Self-efficacy was found to be an essential element that affects the patients SC behaviors **(Wong, McCoy& Wilkins, 2024; Nam et al., 2019).**

As regarding patients' self-efficacy level, the current study findings empirically reported that, there was no important statistical difference between them before implementation of nursing program. While, after implementation of nursing program patients in the study group reported improvement of self-efficacy than patients in the control group.

The findings of the current study are in line with **Abdel-Wahid., (2016)** who conducted " Nurse led intervention to enhance self-care efficacy among patients undergoing urinary diversion at urology and nephrology center - Mansoura University" reported that, both ileal conduit and neobladder cases of the study and control group were not confident with no important statistical difference between them before implementation of a nurse led intervention. While, after implementation

of a nurse led intervention patients in the study group reported a high self-efficacy score than patients in the control group.

As well, this findings in agreement with **Ibrahim et al., (20 22)** who conducted " the effect of nursing instructions on self-efficacy and urostomal complications among patients with ileal conduit" in Egypt, reported that, there was a significant differences between the control and the study group on the variable of total stoma self-efficacy mean scores in the first and second post intervention assessments.

As regarding urostomy patients' quality of life, the patients in the study group of the current study showed a better quality of life than those in the control group after receiving the nursing program. This improvement may be related to the role of education in gaining knowledge, skills and supportive program that can guide changes in personal attitude and are essential for the preservation or promotion of health.

This point of view was supported by **Mohamed& Al-Mansour (2024)** who conducted "knowledge and practice impovements in patients with urinary diversion: the role of educational interventions "reported that, the mean scores of QOL improved in the study groups after implementation of educational intervention and follow up telephone (post and 3 months follow up) among urinary diversion.

As well, this finding in agreement with **Mohamed (2021)** who conducted "Effect of Educational Guidelines on Quality of Life and Self Efficacy for Patients with Colostomy" showed that, there are statistically significant differences in the quality of life of patients with ostoma before and after follow-up and educational instructions in all cases (physiological - psychological - social - spiritual) and the total score. Another study conducted by **Shi et al., (2020)** suggested a significant

increase in QoL of the patients in the experimental group when compared with that of the control group after performing Orem's self-care model.

Regarding to the current study correlations, the finding found positive correlations between urostomy patients' knowledge, SC practice, SE, and QOL. The researcher opinion that patients with better knowledge of urostomy care and the ability to handle all measures of care independent were better stoma adjusted than patient who were less knowledge and had a greater need of care from others. This finding is harmonious with the study conducted by **Mohamed &Fashafsheh. (2019)** who concluded that there was positive correlation between knowledge and SC practice. In addition, positive effects on QOL after completion of an educational intervention and telephone follow-up program in patients with UD.

Also, the current study finding match with, **Mohamed& Al-Mansour, (2023).** Who said that there are statistically correlation between quality of life and (practice & knowledge). Furthermore, the current finding come in agreement with, **Mahdy et al.,(2018)** illustrated that there were positive significant correlations between patients' knowledge, practice, and self-efficacy in a study entitled the effect on patients' self-efficacy and incidence of peristomal complications after permanent urostomy.

Conclusion

Based on the findings of the study, it can be concluded that, the nursing program based on Orem's self-care model had a positive effect on the outcomes of patients as regarding self-care practices, knowledge, and self-efficacy and quality life.

Recommendation

- Develop and implement standardized protocols for urostomy care based on Orem's self-care model to enhance self-care practices and quality of care.
- Conduct longitudinal studies to assess the long-term effects of Orem's self-care model on the quality of life for patients with urostomy.

Reference

Abdel-Wahid,A., (2022). Nurse Led Intervention to Enhance Self-care Efficacy among Patients Undergoing Urinary Diversion at Urology and Nephrology Center- Mansoura University. doctora degree.

Aguirre, R. C. (2022). Implementation of a self-care management program among adult patients with type 2 diabetes mellitus in a primary care clinic (Order No. 29068740). Available from ProQuest Dissertations & Theses Global. (2652902127). Retrieved from: https://www.proquest.com/ dissertations-theses/implementation-self-caremanagement program-among/docview/ 2652902127 /se-2

Baab, S., Azarbarzin, M., & Moghimian, M. (2022). Evaluation of the effectiveness of distance self-care training on self-efficacy and quality of life of patients with intestinal ostomy. Iran Journal of Nursing, 35(135), 2-15.

Babakhanlou, R., Larkin, K., Hita, A. G., Stroh, J., & Yeung, S. C. (2022). Stoma-related complications and emergencies. *International Journal of Emergency Medicine*, *15*(1), 17.

Berman T., Snyder S. & Fredsen G. (2016): Kozier&Erabs, fundamental of nursing text book, 10 ed England, Julie Levin Alexander, p 1656 .

Berti-Hearn L., & Elliott B. (2019). Urostomy Care: A Guide for Home Care Clinicians. Home healthcare now, 37(5), 248-255.

Bozkul, G., Celik, S. S., & Arslan, H. N. (2024). Nursing interventions for the self-efficacy of ostomy patients: A systematic review. *Journal of Tissue Viability*.

Ding, J. Y., Pan, T. T., Lu, X. J., You, X. M., & Qi, J. X. (2024). Effects of peer-led education on knowledge, attitudes, practices of stoma care, and quality of life in bladder cancer patients after permanent ostomy. Frontiers in Medicine, 11, 1431373.

Gamal Ibrahim Alshaar, M., Mossad Ali, M., & Mohamed Allam, H. (2023). Effect of Designed Nursing Protocol on Self-Reported Outcomes among Patients with Bladder Cancer Undergoing Radical Cystectomy. *Journal of Nursing Science Benha University*, *4*(2), 926-952.

Gonzalo, A. (2021). Dorothea Orem: Self-Care Deficit Theory. Nurses labs. Para 1-Para 30. Available at: https://nurseslabs.com/dorothea-orems-self caretheory/#major_concepts_of_the_self-care_ deficit _theory

Grant, M., Ferrell, B., Dean, G., Uman, G., Chu, D., & Krouse, R. (2004). Revision and psychometric testing of the City of Hope Quality of Life–Ostomy Questionnaire. Quality of Life Research, 13, 1445-1457.

Hao, H., Yang, X., Zhu, H., Wang, Z., Zhang, H., & Huang, C. (2022). Effect of the whole seamless connection of nursing from WeChat interactive platform on stigma and quality of life in patients with urinary system cancer. *Digital Health*, *8*, 20552076221102772.

IBRAHIM, D. A., AHMED, B. O., EL-FAYOUMY, H. M., & MAHMOUD, A. S. (2022). EFFECT OF NURSING

INSTRUCTIONS ON SELF-EFFICACY AMONG PATIENTS WITH ILEAL CONDUIT. Online Open Access. DOI 10.17605/OSF.IO/DVQ79

Karaçay P., Toğluk Yigitoglu E., & Karadağ A. (2020). The validity and reliability of the Stoma Self-Efficacy Scale: a methodological study. *International Journal of Nursing Practice*, *26*(6), e12840.

Li, S. Q., Luo, C. L., Qiu, H., Liu, Y. X., & Chen, J. M. (2024). Effect of Orem's self-care model on discharge readiness of patients undergoing enterostomy: A randomized controlled trial. *European Journal of Oncology Nursing*, *70*, 102549.

Mahdy, N. E., Ameen, D. A., & Mousa, W. E. (2018). Urinary Stoma Care Guidelines: The Effect on Patients' Self-efficacy and Incidence of Peristomal Complications After Permanent Urostomy. Journal of Health, Medicine and Nursing, (47), 59-74.

Marinova, P., & Marinova, R. (2024). Patient-centred stoma care support: urostomy patients. British Journal of Community Nursing, 29(12), 580-587.

Marques, F. R. D. M., Charlo, P. B., Pires, G. A. R., Radovanovic, C. A. T., Carreira, L., & Salci, M. A. (2022). Nursing diagnoses in elderly people with diabetes mellitus according to Orem's Self-CareTheory. Revista brasileira de enfermagem, 75Suppl 4(Suppl 4), e20201171. Available at: https://doi.org/10.1590/0034-7167-2020-1171.

Melo, R. M. D. C., Lopes, E. C. R., Vilas Boas, J. L. C., Santos, L. B., Amaro, S. C. F., Ventura-Silva, J. M. A., & Oliveira, I. D. J. (2024). Empowering dependent patients in self-care when returning home: scoping review. *Working with Older People*.

Mohamed, A. S., & Al-Mansour, A. H. (2024). KNOWLEDGE AND PRACTICE IMPROVEMENTS IN PATIENTS WITH URINARY DIVERSION: THE ROLE OF EDUCATIONAL INTERVENTIONS. *Columbia Journal of Health Sciences and Nursing*, *1*(1), 52-67.

Mohamed, S. A., & Fashafsheh, I. H. (2019). Effect of educational intervention and telephone follow-up program on knowledge, practice and quality of life among patients with urinary diversion: A quasi-experimental study. Int J Nurs, 6(1), 58-71. doi: 10.15640/ijn.v6n1a7.

Nam, K. H., Kim, H. Y., Kim, J. H., Kang, K. N., Na, S. Y., & Han, B. H. (2019). Effects of social support and self-efficacy on the psychosocial adjustment of Korean ostomy patients. International wound journal, 16, 13-20. https://doi.org/10.1111/iwj.13038.

Perry, A. G., Potter, P. A., Ostendorf, W. R., & Laplante, N. (2021). Clinical Nursing Skills and Techniques-E-Book: Clinical Nursing Skills and Techniques-E-Book. Elsevier Health Sciences.

Pham, H., Torres, H., & Sharma, P. (2019). Mental health implications in bladder cancer patients: a review. In Urologic Oncology: Seminars and Original Investigations (Vol. 37, No. 2, pp. 97-107).

Rammant, E., Van Wilder, L., Van Hemelrijck, M., & Fonteyne, V. (2020). Health-related quality of life overview after different curative treatment options in muscleinvasive bladder cancer: an umbrella review. Quality of Life Research, 29, 2887-2910.

Reda Mahmoud, M., Tawfeek Ahmed, S., Faheem Gendy, J., & Abdelbary Ali, A. (2022). Quality of Life after Radical Cystectomy for Patients with Bladder Cancer. Egyptian Journal of Health Care, 13(4), 510-522.

Serag El Din Abd Elwaged, M., Ahmed Abd El Latif, S., & El Sayed Mohamed, R. (2022). Psycho-Educational Nursing Program for Enhancement the Quality of Life among Bladder Cancer Patients with Urinary Diversion. *Journal of Nursing Science Benha University*, *3*(1), 582-594.

Shi, Y. W., Gu, Z. J., Yuan, H., Yang, J., & Xia, J. D. (2020). Effect of Orem's self-care model on quality of life and complications in the patients with cutaneous ureterostomy after radical cystectomy. KUWAIT MEDICAL JOURNAL, 52(1), 23-28.

Siegel, R. L.; Giaquinto, A. N.; Jemal, A. ..(2024). Cancer Statistics, 2024. CA. Cancer J. Clin. 2024, 74 (1), 12– 49, DOI: 10.3322/caac.21820.

Smith, J., et al. (2022). "The Impact of Self-Care Interventions Quality of Life in Patients with Urostomy." Journal of Wound, Ostomy, and Continence Nursing, 49(3), 247-254.

Stromberg, H. (2021). Medical-Surgical Nursing E-Book: Concepts & Practice. Elsevier Health Sciences , 5ed, P820-823.

Tan, R., Wang, L., Xia, R., & Zheng, H. (2022). Use of an Application to Increase Self-Care Ability, Improve Quality of Life, and Decrease Stoma Complications in Patients With Ileocystoplasty or Ureterostomy Due to Bladder Cancer. *Wound Management & Prevention*, *68*(11), 26-31.

Tang, Z., Qian, Y., Wang, N., Chen, Y., Huang, H., Zhang, J., ... & Tang, F. (2025). HPV-Associated Gene Signatures in Bladder Cancer: A Comprehensive Prognostic Model and its Implications in Immunotherapy. International Journal of Medical Sciences, 22(1), 140.

Veccia, A., Brusa, D., Treccani, L., Malandra, S., Serafin, E., Costantino, S., ... & Antonelli, A. (2024, August). Radical cystectomy with stentless urinary diversion: A systematic review and meta-analysis of comparative studies. In Urologic Oncology: Seminars and Original Investigations. Elsevier.

Wong, D., McCoy, A. M., & Wilkins, P. A. (2024). Urinary Tract Disorders. *Equine Neonatal Medicine*, 684-704.